METHODS: A 3-state Markov model was developed. Transition probabilities, utilities, and costs were assumed. Costs and effects were discounted at 3%. Decision analytic CL and matrix CL were calculated as the interquartile range (IQR) from 10,000 simulations. For each simulated value, over or under was defined relative to the exact value. Bias was defined as the ratio of (over − under)/(over + under). DATA software was used for decision analysis; S Plus was used for matrix programming.
RESULTS: Estimated life-years, quality-adjusted life-years (QALY), and costs ($) are summarized in the table below.
CONCLUSIONS: Decision analytic software may yield biased estimates of costs and effects. The implications of this must be considered. Analysts and policy-makers should carefully validate all decision models prior to using them to determine health policy.

	Data analytic		Matrix inversion	
	Median (IQR)	Bias	Median	Bias
Life-years	5.187 (4.812; 5.611)	0.086	5.186 (4.803; 5.605)	0.068
QALY	3.960 (3.669; 4.286)	0.074	3.927 (3.639; 4.251)	0.011
$	134,900 (110,900; 160,800)	0.006	133,800 (109,700; 160,000)	−0.014
$ per life-year	25,900 (20,900; 31,500)	−0.035	25,900 (21,700; 30,300)	−0.041
$ per QALY	33,800 (27,400; 41,300)	−0.038	34,100 (28,200; 40,600)	−0.017

TPDM4

MODELING LIFETIME TREATMENT COSTS OF HIV/AIDS PATIENTS

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OBJECTIVES: A model was developed to evaluate the cost-effectiveness of a non-nucleoside reverse transcriptase inhibitor (RTI), delavirdine (DLV) in combination with two nucleoside RTIs (AZT + 3TC) versus a control arm of AZT + 3TC in the management of HIV/AIDS patients.
METHODS: A Markov chain model is used to describe the clinical progression of HIV/AIDS patients based on discrete CD4 cell count categories. The first year transition probabilities are estimated from a head-to-head clinical trial comparing these regimens and subsequent annual probabilities are derived from previously reported trials describing the natural progression of the disease. Resource use and cost data are based on information collected from clinical experts and include medical resource use for routine care and the prophylaxis and treatment of opportunistic infections. The economic and clinical effects of antiviral treatment are examined. Sensitivity analysis was performed to determine the robustness of the cost-effectiveness results. The effect of time preference is included by discounting future costs and quality-adjusted life-years (QALYs) in the sensitivity analysis.
RESULTS: The lifetime treatment cost for a cohort of patients at beginning CD4 cell counts of 350 to 500 is $105,880 for the DLV arm and $101,962 for the control arm. The DLV incremental cost per QALY gained was $13,262 for the undiscounted base case. Applying a discount rate of 5% for costs alone resulted in US $12,637 per QALY gained; discounting costs and benefits at 5% resulted in US $6854 per QALY gained.
CONCLUSIONS: The results indicate that DLV in combination is a cost-effective treatment for this cohort of patients as compared to a standard combination therapy. Future application of the model to other treatment patterns with DLV are forthcoming.

TPDM5

COST-BENEFIT ANALYSIS OF AN INTRA-UTERINE LEVONORGESTREL-RELEASING DEVICE *MIRENA* VERSUS HYSTERECTOMY FOR WOMEN WITH MENORRHAGIA

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OBJECTIVE: The study purpose was to evaluate the overall cost of hysterectomy versus a levonorgestrel-releasing intra-uterine device *Mirena* backed up by hysterectomy for women with heavy menstrual bleeding (menorrhagia).
METHODS: A decision tree was based on a clinical trial of *Mirena* versus hysterectomy. The model considers pharmaceuticals, GP and specialist consultations, hysterectomy, complications of surgery and surgical cancellation rates. Future costs are discounted to present value at 5% per annum.
RESULTS: In the base case, over 20 years from a healthcare payer perspective, first-line treatment with *Mirena* is predicted to cost $3047 versus $3800 per individual for first-line treatment with hysterectomy. From a healthcare funding agency (HFA) perspective, the costs are $2289 for *Mirena* versus $2867 for hysterectomy. From a pharmaceuticals budget perspective, *Mirena* costs $639 versus $284 for hysterectomy. In the base case, first-line treatment with *Mirena* costs 70% to 80% of the cost of hysterectomy over periods of 5 to 20 years. Switching a candidate for hysterectomy to *Mirena* has the potential to avert costs in the range $753 to $1076 per woman from a healthcare payer perspective and $578 to $807 from an HFA perspective. Threshold analysis shows that therapy with *Mirena* will be less costly than hysterectomy provided that more than 16% of women with menorrhagia who accept *Mirena* subsequently cancel hysterectomy in